

**National Transportation Safety Board  
Washington, DC 20594**

**Brief of Accident**

**Adopted 07/23/2003**

DEN02GA074		07/18/2002		Estes Park, CO		Aircraft Reg No. N7620C		Time (Local): 18:40 MDT		
Make/Model:		Consolidated-Vultee / P4Y-2						Fatal	Serious	Minor/None
Engine Make/Model:		Wright / R2600-35				Crew	2	0	0	
Aircraft Damage:		Destroyed				Pass	0	0	0	
Number of Engines:		4								
Operating Certificate(s):		Agricultural Operator								
Type of Flight Operation:		Aerial Application								
Reg. Flight Conducted Under:		Public Use								
Last Depart. Point:		Broomfield, CO				Condition of Light:		Day		
Destination:		Local Flight				Weather Info Src:		Weather Observation Facility		
Airport Proximity:		Off Airport/Airstrip				Basic Weather:		Visual Conditions		
						Lowest Ceiling:		12000 Ft. AGL, Broken		
						Visibility:		30.00 SM		
						Wind Dir/Speed:		040 / 008 Kts		
						Temperature (°C):		34		
						Precip/Obscuration:		None / None		
Pilot-in-Command		Age: 39				Flight Time (Hours)				
Certificate(s)/Rating(s)						Total All Aircraft: 3658				
Flight Instructor; Commercial; Multi-engine Land; Single-engine Land						Last 90 Days: 217				
Instrument Ratings						Total Make/Model: 1328				
Airplane						Total Instrument Time: UnK/Nr				

The airplane was maneuvering to deliver fire retardant when its left wing separated. Aircraft control was lost and the airplane crashed into mountainous terrain. A witness on the ground took a series of photographs that showed the airtanker's left wing separating at the wing root and the remaining airplane entering a 45-degree dive to the ground in a counterclockwise roll. An examination of the airplane wreckage revealed extensive areas of preexisting fatigue in the left wing's forward spar lower spar cap, the adjacent spar web, and the adjacent area of the lower wing skin. The portion of the wing containing the fatigue crack was obscured by the retardant tanks and would not have been detectable by an exterior visual inspection. An examination of two other airtankers of the same make and model revealed the area where the failure occurred on the accident airplane was in a location masked by the airplane's fuselage construction. The airplane was manufactured in 1945 and was in military service until 1956. It was not designed with the intention of operating as a firefighting airplane. In 1958, the airplane was converted to civilian use as an airtanker and served in that capacity until the time of the accident. The investigation revealed that the owner developed service and inspection procedures for the airtanker; however, the information contained in the procedures did not adequately describe where and how to inspect for critical fatigue cracks. The procedures were based on U.S Navy PB4Y-2 airplane structural repair manuals that had not been revised since 1948.

Brief of Accident (Continued)

DEN02GA074				
File No. 13174	07/18/2002	Estes Park, CO	Aircraft Reg No. N7620C	Time (Local): 18:40 MDT

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Occurrence #1: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION  
Phase of Operation: MANEUVERING - AERIAL APPLICATION

Findings

1. WING - FAILURE,TOTAL
2. (C) WING,SPAR - FATIGUE
3. (C) WING,SKIN - FATIGUE
4. (F) MAINTENANCE,INSPECTION - INADEQUATE - COMPANY/OPERATOR MANAGEMENT

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Occurrence #2: LOSS OF CONTROL - IN FLIGHT  
Phase of Operation: DESCENT - UNCONTROLLED

Findings

5. AIRCRAFT CONTROL - NOT POSSIBLE

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Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER  
Phase of Operation: DESCENT - UNCONTROLLED

Findings

6. TERRAIN CONDITION - MOUNTAINOUS/HILLY

Findings Legend: (C) = Cause, (F) = Factor

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The National Transportation Safety Board determines the probable cause(s) of this accident as follows.  
the inflight failure of the left wing due to fatigue cracking in the left wing's forward spar and wing skin. A factor contributing to the accident was inadequate maintenance procedures to detect fatigue cracking.